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The definition of mathematical probability from which are developed the elementary theorems of probability is quoted from Czuber, and is about the usual definition of *a priori* probability. The author is rather emphatic in his criticism of the idea of replacing the *a priori* probabilities of Laplace by the empirical ratios of Mill, Venn and Chrystal. He believes the distrust of *a priori* probabilities is due to a misapprehension of the true nature of Bernoulli's theorem, which is the cornerstone of the theory of statistics. The chapter on probability *a posteriori* deals with the criticisms of Bayes's rule in a rather constructive manner, by indicating the limitations under which Bayes's rule will give correct results in practise. The author makes the connection between *a priori* probabilities and statistical series by the use of the well-known theorem of Tchebycheff. In this connection he offers a proof that the limit of a relative frequency α/s when s becomes infinite is the postulated *a priori* probability p . It seems to the reviewer that the notion of limit here employed is not quite the rigorous notion; for, the statement that the probability that $|\alpha/s - p| < \delta$ approached 1 as a limit, is not the same as the usual statement that $|\alpha/s - p|$ becomes and *remains* less than δ . The author does not seem to discriminate in this connection between a point of condensation and a limit point.

One of the most interesting and important parts of this book is its neat and striking applications of Bernoulli, Poisson and Lexis series to the characterization of actual data. Furthermore, the application of the Lexian ratio and of the Charlier coefficient of disturbance is clearly shown. Taken as a whole, this book will be found of much value to students of the mathematical methods in statistics.

H. L. RIETZ

Gould's Practitioner's Medical Dictionary.

Third edition, revised and edited by R. J. E. SCOTT, M.A., B.C.L., M.D., of New York. Pp. xx + 962. Flexible cloth, round corners, marbled edges. P. Blakiston's Son & Co., Philadelphia. Price \$2.75.

The history of medical dictionaries begins with the fifteenth century. The first works of the kind are the "Synonyma" (Venice, 1473) of Simone de Cordo or Simon of Genoa and the contemporary Pandects of Mathæus Silvaticus. Both these works are alphabetical lists of medicinal simples, but a goodly number of real medical dictionaries were published during the Renaissance period, in particular those of Lorenz Fries or Phryesen (1519), Henri Estienne or Stephanus (1564) and Jean de Gorris (1564).

In the seventeenth century appeared the famous "Lexica" of Bartholomæo Castelli (1607) and Steven Blancard (1679) which passed through many editions. After these the number of medical dictionaries is legion. Among the best known of more recent times are those of Robert James (London, 1743) and P. H. Nysten (Paris, 1810), which, in 1855, was entirely rewritten by Emile Littré and Charles Robin and is still a standard source of reference. In England, the dictionary of the New Sydenham Society (1878-99), in America that of Frank P. Foster (1888-93), and in France, Galtier-Boissière's "Larousse Médical illustré" (1912), are monuments of scholarship. Gould's large illustrated medical dictionary (1894), frequently revised and reedited, has been of great practical use to the medical profession. Of late years the tendency has been towards handy volumes of reasonable thickness, printed on thin paper, with flexible covers, and of these the new edition of Gould's Practitioner's Dictionary is an excellent example.

This new edition is unsurpassed as to comprehensiveness, clearness and size. It contains over 70,000 words. To reduce the size of the book and to make it a handy volume a small type had to be selected, but the type is very clear and legible and is even a little larger than that used in Webster's Unabridged Dictionary. Each word is accompanied by its pronunciation and followed by its etymology. The definitions are clear and concise.

The book contains all the numerous and latest eponyms in their proper alphabetical order, such as Abderhalden's test, Alzheimer's disease, Lane's kink, Meltzer's method,

Schlatter's disease. An important feature is the large number of new words with which the medical vocabulary has been enriched during the last few years. The book contains such new words as anoci-association, biometer, colliculectomy, gassed, keritherapy, leukotoxic, serobacterins, sympathoblasts, etc.

This handy, practical book, in octavo size, $1\frac{1}{4}$ inches thick, containing nearly 71,000 words, is unique among modern dictionaries and can not fail to receive a hearty welcome by the medical practitioner and the student of medicine.

A. ALLEMAN

ARMY MEDICAL MUSEUM

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES

(VOLUME 2, NUMBER 5)

THE fifth number of Volume 2 of the *Proceedings of the National Academy of Sciences* contains the following articles:

1. *The High Frequency Spectrum of Tungsten*: ALBERT W. HULL and MARION RICE, Research Laboratory, General Electric Company.

The authors show two photographs of the spectrum of X-rays taken in the usual manner in a rock-salt crystal. They also give figures which show the ionization current as a function of the angle of incidence. A comparison with previous results obtained by others is sketched.

2. *On the Foundations of Plane Analysis Situs*: ROBERT L. MOORE, Department of Mathematics, University of Pennsylvania.

As point, limit-point and regions (of certain types) are fundamental in analysis situs, the author has set up two systems of postulates for plane analysis situs based upon these notions; each set is sufficient for considerable body of theorems.

3. *A General Theory of Surfaces*: EDWIN B. WILSON and C. L. E. MOORE, Department of Mathematics, Massachusetts Institute of Technology.

Continuing the work of Kommerell, Levi and Segre, a theory of two-dimensional surfaces in n -dimensional space is developed by

the method of analysis outlined by Ricci in his absolute differential calculus.

4. *Dynamical Stability of Aeroplanes*: JEROME C. HUNSAKER, U. S. Navy and Massachusetts Institute of Technology.

A comparative detailed study of two aeroplanes, one a standard military tractor, the other designed for inherent stability, is made for the purpose of reaching general conclusions of a practical nature with respect to aeroplane design. It appears that inherent stability (except at low speed) can be obtained by careful design without departing seriously from the standard type now in use.

5. *Cliffed Islands in the Coral Seas*: W. M. DAVIS, Department of Geology and Geography, Harvard University.

The author extends his former work on the Origin of Coral Reefs to include the explanation of the cliffs of exceptional reef-encircled islands of which no adequate explanation has previously been given.

6. *On Some Relations between the Proper Motions, Radial Velocities and Magnitudes of Stars of Classes B and A*: C. D. PERRINE, Observatorio Nacional Argentino, Cordoba.

The velocity distribution of classes $B-B_5$ and A differ from the distributions found for the F , G , K and M classes by Kapteyn and Adams.

7. *Asymmetry in the Proper Motions and Radial Velocities of Stars of Class B and Their Possible Relation to a Motion of Rotation*: C. D. PERRINE, Observatorio Nacional Argentino, Cordoba.

Stars of class B show differences in the proper motions in the two regions of the Milky Way at right angles to the direction of solar motion; the differences appear to be best explained by a general motion of rotation of the system of stars in a retrograde direction about an axis perpendicular to the Milky Way.

8. *Theory of an Aeroplane Encountering Gusts*: EDWIN BIDWELL WILSON, Department of Mathematics, Massachusetts Institute of Technology.

The longitudinal motion of an aeroplane encountering head-on, vertical, or rotary gusts is discussed by the method of small oscillations.